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Atty Dkt No. GP-303632 (GM-0432PUS)

Remarks

Claims 1-15 are pending in this application. Applicant thanks the Examiner for considering the Information Disclosure Statement submitted. The Drawings were objected to under 37 CFR 1.83(a). Claims 1-13, and 15 were rejected under 35 USC 102(b) and claim 14 was rejected under 35 USC 103(a).

Drawings Objection – 37 CFR 1.83(a)

The Examiner objected to the Drawings under 37 CFR 1.83(a) requiring that the slit in the conduit be shown. Figure 6 sufficiently shows the slit at 70. Additionally, the Specification has been amended to clarify any ambiguity of whether the “slit” is shown in the Drawings. In Random House Webster’s 2001 College Dictionary slot is defined as “a slit or other narrow opening...” Thus, slit 70 and/or “slot of about 1cm width” are used interchangeably in the specification. Therefore, the Drawings should be accepted as they are compliant with 37 CFR 1.83(a).

Claim Rejections - 35 U.S.C. § 102(b)

Claims 1-13 and 15 are rejected under 35 U.S.C. § 102(b) as being anticipated by Lay (US 5,141,173).

For a rejection to be proper under 35 U.S.C. §102(b), every element and limitation found in the rejected claim must be found in the 102(b) reference. “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. V. Union Oil Co. of California*, §14F.2d628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also, MPEP §2131.

Generally speaking, the Examiner is incorrect when he states that Lay teaches a conduit (68) spaced from a support surface with a pressure-jet having an inlet opening (sic plenum)(64) and an outlet opening ports/slits (62) configured to form a virtual airdam -- and a blower (66) operable to project a curtain of air from the forward end of the vehicle toward the support surface to reduce vehicle drag.

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First, Lay's pressure jets 62 are operable only when the vehicle travels "through the air" (Col. 8, lines 21, 22), or "when air travel is anticipated" (col. 7, lines 39-42). Thus Lay is irrelevant to avoiding "any normal abutment on [a] support surface", as claimed. Moreover, Lay's plenum or inlet 64 is portable so that it may be mounted on the vehicle 10 only when air travel is anticipated" (Col. 7, lines 39-42).

Second, Lay's pressure jets 62 only operate selectively at the four corners of the vehicle when they "receive steering commands -- in response to inputs from the joystick 58 for fine steering control of the vehicle flight." (Col. 7, lines 23-26 and Col. 10, lines 67-68). Thus, when his car is not in flight Lay's four separate jets 62 are not "operable to project a curtain of air -- toward [a] support surface with sufficient flow and direction to form a virtual airdam --", as claimed.

Third, the "thrust of each of (Lay's) pressure jet means has an essentially circular cross-section" to stabilize the vehicle when the vehicle is traveling through the air. (Col. 9, lines 25-36). A jet of circular cross-section does not anticipate "a curtain of air --- to form a virtual airdam" (emphasis added), as generally claimed, nor such a "curtain" as one expressly being projected from "a slit", as in claims 3, 9, and 10.

More particularly, regarding claim 1, the Examiner is correct when he states that Lay's car discloses a conduit and source of air pressure, albeit for a car in flight. But the Examiner is incorrect, in his rejection of claim 1, when he states that Lay teaches "blower source (66) spaced ... from .. any normal abutment on the support surface ... operable to project a curtain of air ... toward the support surface." This is because Lay's blower 66 doesn't operate when his car is on a support surface. Claim 1 recites, "A vehicle having a forward end including a conduit spaced from a support surface for the vehicle, said conduit having a source of air under pressure and is spaced sufficiently from any normal abutment on said support surface to avoid said abutment..." The location of the conduit, as claimed, is limited to being sufficiently spaced from any normal abutments on the support surface. Moreover, when Lay's vehicle is in flight, it is not on a "support surface" and the spacing of the ducts (68) in relation to an abutment on the ground is moot. Lay does not anticipate claim 1.

Regarding claim 2, note is taken of the claim being dependent upon claim 1 and is believed to be patentable for the same reason that claim 1 is patentable.

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Regarding claim 3, the Examiner fails to present a reference with a "slit in the conduit for projecting the curtain of air to form a virtual airdam." Instead, the Examiner attempts to equate the circular cross-section jet forming ports of Lay with a curtain and dam-forming slit. However, a slit – something having a long and narrow opening – is not the same as a circular port. The slit enables the production of an airdam formed by an air curtain, an aspect of the Applicant's invention that is not disclosed in Lay. Therefore, the rejection of claim 3 is also improper.

Regarding claims 4 and 5, note is taken of the claims being dependent upon claim 1 and are believed to be patentable for the same reason that claim 1 is patentable.

Regarding claim 6, note is taken of the claim being dependent upon claim 1 and is believed to be patentable for the same reason that claim 1 is patentable. Moreover, the Examiner notes that it is well known to include the radiator/cooling system within the existing airflow paths. However, it is not well known to use a radiator/cooling system within the existing airflow paths to produce a virtual airdam as recited in claim 6 with the incorporation of claim 1.

Regarding claim 7, the Examiner disregards the specific elements and limitations of the conduit thus failing to satisfy §102(b) anticipation. Claim 7 recites, a vehicle having "a conduit spaced from a support surface for the vehicle... (and) sufficiently from any normal abutment on said support surface to avoid said abutment and operable to project a curtain of air from said forward end toward said support surface..." Again, Lay fails to operate his blower 66 when his vehicle is on a "support surface" and has no motivation to consider the spacing of his conduit "from any normal abutment on said support surface" or the projection of air "toward said support surface." Accordingly, the rejection of claim 7 should be withdrawn.

Regarding claim 8, the claim incorporates the limitations of claim 7 and is believed to be patentable for the same reason that claim 7 is patentable.

Regarding claim 9, the claim is dependent upon claim 7 and is believed to be patentable for the same reason that claim 7 is patentable. Moreover, the Examiner fails to present a reference with a "slit in the conduit for projecting the curtain of air ... to form a virtual airdam." Instead, the Examiner equates the ports provided in Lay with the claimed "slit." However, a slit – something having a long and narrow opening – is not the same as two ports which produce jets of circular cross-section in opposite directions to steer. The slit enables the production of an air curtain to form a dam, another aspect of the Applicant's invention that is not

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disclosed in Lay, whether Lay's vehicle is in the air or on the ground. The rejection of claim 9 is also improper.

Regarding claim 10, note is taken of the claim being dependent upon claim 7 and is believed to be patentable for the same reason that claim 7 is patentable.

Regarding claim 11, the claim includes the limitations of claim 7 and is believed to be patentable for the same reason that claim 7 is patentable. Moreover, the Examiner fails to present a reference with the elements and limitations of the claim. The Examiner notes that it is well known to include the radiator/cooling system within the existing airflow paths. However, it is not well known to use a radiator/cooling system within the existing airflow paths to produce a virtual airdam as incorporated in claim 11 through its dependency upon claim 7, especially when Lay's blower is inoperative when his vehicle is on the ground and not in flight. The Examiner's rejection is improper.

Similarly, regarding claim 12, the Examiner disregards the specific elements and limitations of the conduit having a source of air pressure thus failing to satisfy the requirements of a proper 102(b) rejection. Specifically, claim 12 recites a method of reducing drag by "forming an air conduit --- to direct the air --- toward said vehicle support; ..." and "supplying air through said conduit --- to form a virtual airdam..." Moreover, Lay's blower for "supplying air" is inoperative when his vehicle is on a "vehicle support", i.e., not in flight. Accordingly, the rejection of claim 12 should be withdrawn.

Regarding claim 13, the Examiner fails to present a reference with the elements and limitations of the claim. Claim 13 recites "a virtual airdam assembly for a moveable support comprising an elongated conduit configured to be supportable on the underside of a front end portion of the movable support, said conduit having an inlet opening configured for receiving air and an outlet opening configured to form a virtual airdam with the air received to reduce drag on the movable support." The elongated conduit is not present in Lay. The Examiner points to the pressure jets 62 provided in Lay, however, these pressure jets are not elongated and are aimed in four different directions for steering. Accordingly, Lay has no "outlet opening configured to form a virtual airdam with the air received to reduce drag on the moveable support." Accordingly, the Examiner's rejection of claim 13 should be withdrawn.

Regarding claim 15, note is taken of the claim being dependent upon claim 13 and is believed to be patentable for the same reason that claim 13 is patentable.

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Claim Rejections - 35 U.S.C. § 103(a)

Claim 14 is rejected under 35 U.S.C. § 103(a) as being anticipated by Lay (US 5,141,173) in view of Wainfan et al. (5,860,620).

A proper rejection under 35 U.S.C. § 103(a) requires that the Examiner establish *prima facie* obviousness. As recited in the MPEP, “[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.” MPEP § 2142. Three basic criteria must be met to establish *prima facie* obviousness. MPEP § 2143. First, there must be some suggestion or motivation to modify a reference or combine teachings. *Id.* Second, there must be reasonable expectation of success. *Id.* Third, the prior art reference or references must teach or suggest all the claim limitations. *Id.*

Claim 14 is allowable because the Examiner fails to present references with every element and limitation presented. Claim 14 is dependent on claim 13 and is believed to be patentable for the same reasons that Claim 13 is patentable. The Examiner adds Wainfan, et al. because the movable support in Lay is not “a vehicle front engine compartment.” However, like Lay, the pressure jet and ducted fan in Wainfan et al. is for steering the vehicle by directing the efflux from the propulsion means, rather than “to form a virtual airdam --- to reduce drag on the movable support.” (col. 9, lines 45-52; col. 10, lines 63-67)

Moreover, claim 14 recites, “the moveable support is a vehicle front engine compartment adapted to receive ram air and the outlet of the conduit is configured to project a curtain of air away from the engine compartment with sufficient flow to increase volumetric air flow for cooling in said engine compartment.” (underline added for emphasis). However, Wainfan et al. teaches the opposite from projecting the current of air away from the engine compartment, when they state at col. 6, lines 14-17 that “A pair of propulsion mechanisms 34 are located adjacent and to either side of the nose end 24 of the main structure 22 for generating an efflux and for directing the resulting efflux toward the lifting body 28.” (underline added for emphasis) For proper rejection under §103(a) every element and every limitation must be presented by the Examiner. MPEP §2131. Clearly, this is not the case since the provided secondary reference teaches away from the subject matter presented in claim 14. Therefore, the rejection of claim 14 should be withdrawn.

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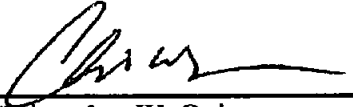
CONCLUSION

This Amendment is believed to be fully responsive to the Office Action mailed September 23, 2004. The remarks in support of the rejected claims are believed to place this application in condition for allowance, which action is respectfully requested.

Please charge any fees associated with this amendment to deposit account 07-0960.

Respectfully submitted,

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